

FIXATION OF THE SINGLE TYPE (LECTOTYPIC) SPECIMENS OF SPECIES OF
AMERICAN ORTHOPTERA.

DIVISION II.

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THE SPECIES OF NORTH AMERICAN ORTHOPTERA DESCRIBED BY
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The desirability of selection and fixation of a single type was pointed out by the last International Entomological Congress, and the first paper on this subject with reference to the North American species of Orthoptera by Mr. James A. G. Rehn and the junior author of the present paper has recently appeared in the PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES, 1912, pp. 60-128. In the preface to that paper the subject is discussed and method of selection of lectotypic specimens as followed in that contribution explained. In the present paper the work is made easy, owing to the fact that the author of all the species treated has selected from the typical series that specimen for single type which he would have selected at the time the species was described, had such action at that time been customary. The type numbers of the United States National Museum for Orthoptera are not available in fixing single types, though they are given in the original descriptions of all new species recently described or named from material belonging to that institution. This is due to the fact that in the Orthoptera Collection these type numbers do not refer to a single type, or to the male and female types of a species, but usually to the entire typical series. Of the seventy-five species described by the senior author which are found in North America, we find sixty-two single types in the United States National Museum, seven in the Museum of the Brooklyn Institute of Arts and Sciences, two in the Scudder Collection, and one each in the American Museum of Natural History of New York, the Saussure Collection, and the Morse Collection, while of one species the typical series is lost. At the present day all of these single types are extant, with the exception of the one mentioned as lost; those of the United States National Museum are in Riker Mounts. The nomenclature given is that of the original description,

as this paper is not intended to be in any way revisionary. All forms described by the senior author at the present date considered valid, and also all synonyms, are here treated.

SPONGOPHORA APICEDENTATA.

Proc. U. S. N. M., Vol. XXVIII, p. 461, fig. 1a, 1905.

Based on a pair from the same locality.

Single type here designated: figured ♂; Tucson, Arizona, January 14, on Giant Cactus, *Cereus gigantea*; H. G. Hubbard; U. S. N. M. Collection.

ANAPLECTA ABORTIVA.

Mus. Brooklyn Inst. Arts and Sci. Bulletin, Vol. I, No. 4, p. 105, 1904.

Described from a single female specimen from Esperanza Ranch, Brownsville, Texas, August 4, [1904]; [Chas. Schaeffer];¹ Mus. Brooklyn Inst. Arts and Sci. Collection.

HOMEOGAMIA BOLLIANA NIGRICANS.

Mus. Brooklyn Inst. Arts and Sci. Bulletin, Vol. I, No. 4, p. 107, 1904.

Based on several males from one locality.

Single type here designated: ♂; Esperanza Ranch, Brownsville, Texas, June [1903]; [C. Schaeffer]; Mus. Brooklyn Inst. Arts and Sci. Collection.

HOMEOGAMIA APACHA INFUSCATA.

Proc. U. S. N. M., Vol. XXVIII, p. 463, 1905.

Based on a single male from Phoenix, Arizona, June 4, 1904; Dr. R. E. Kunzé; U. S. N. M. Collection.

LATINDIA SCHWARZI.

Proc. Ent. Soc. Wash., Vol. V, No. 2, p. 165, 1903.

Described from three males from the same locality.

Single type here designated: ♂; Madera Canyon, Santa Rita Mountains, Arizona, July 7, 1898; E. A. Schwarz; U. S. N. M. Collection.

DIAPHEROMERA ARIZONENSIS.

Proc. U. S. N. M., Vol. XXVI, p. 877, 1903.

¹ The use of brackets in the present paper indicates authentic information not contained in the original description.

Based on a unique male from Hot Springs, Arizona, June 28, 1901; E. A. Schwarz and H. S. Barber; U. S. N. M. Collection.

DIAPHEROMERA PERSIMILIS.

Mus. Brooklyn Inst. Arts and Sci. Bulletin, Vol. I, No. 4, p. 107, 1904.

Based on two males and one female from one locality.

Single type here designated: ♂; Esperanza Ranch, Brownsville, Texas, June [1903]; [Chas. Schaeffer]; *Mus. Brooklyn Inst. Arts and Sci. Collection*.

PSEUDOSERMYLE TRUNCATA.

Proc. U. S. N. M., Vol. XXVI, p. 869, Pl. LVIII, figs. 3-3b, 1903.

Described from a single female from Dos Cabezas, Arizona, June, 1891; U. S. N. M. Collection.

PSEUDOSERMYLE BANKSII.

Proc. U. S. N. M., Vol. XXVI, p. 871, 1903.

Based on two males from different localities.

Single type here designated: ♂; Brazos County, Texas, September; N. Banks; U. S. N. M. Collection.

BACUNCULUS BLATCHLEYI.

Jn. N. Y. Ent. Soc., Vol. XIII, p. 212, 1905.

Based on a pair from the same locality.

Single type here designated: unique ♂; Starke County, Indiana; W. S. Blatchley; U. S. N. M. Collection.

HOPLOLIBETHRA TUBERCULATA.

Mus. Brooklyn Inst. Arts and Sci. Bulletin, Vol. I, No. 4, p. 108, Pl. VI, figs. 1, 2, 1904.

Described from a unique female specimen from Esperanza Ranch, Brownsville, Texas, June 25, [1903]; [Chas. Schaeffer]; *Mus. Brooklyn Inst. Arts and Sci. Collection*.

APLOPUS MAYERI.

Jn. N. Y. Ent. Soc., Vol. XIII, p. 83, 1905.

Based on a pair from the same locality.

Single type here designated: ♂; Loggerhead Key, Dry Tortugas, Florida; Dr. A. G. Mayer; *Mus. Brooklyn Inst. Arts and Sci. Collection*.

ACHURUM MINIMIPENNE.

Mus. Brooklyn Inst. Arts and Sci. Bulletin, Vol. I, No. 4, p. 110, Pl. VI, Figs. 3, 4, 1904.

Based on a unique female from Brownsville, Texas, April 22, [1903]; [Chas. Schaeffer]; *Mus. Brooklyn Inst. Arts and Sci. Collection*.

LIGUROTETRIX KUNZEL.

Proc. Ent. Soc. Wash., Vol. V, No. 2, p. 162, 1903.

Based on a pair from the same locality.

Single type here designated: unique ♂; Phoenix, Arizona, September 10, 1902; Dr. R. E. Kunzé; U. S. N. M. Collection.

CHIMAROCEPHALA PACIFICA OBTUSA.

Proc. Ent. Soc. Wash., Vol. VII, Nos. 2, 3, p. 124, 1906.

Based on a single male from Monterey County, California, August, 1903; Coleman; U. S. N. M. Collection.

CHIMAROCEPHALA PACIFICA INCISA.

Proc. Ent. Soc. Wash., Vol. VII, Nos. 2, 3, p. 124, 1906.

Based on material misidentified as *Chimarocephala pacifica* Thomas, by Saussure; from one locality.

Single type here designated: ♀; California, Saussure Collection.

ENCOPTOLOPHUS SUBGRACILIS.

Proc. Ent. Soc. Wash., Vol. V, No. 2, p. 163, 1903.

Based on two males and one female from a single locality.

Single type here designated: ♂; Phoenix, Arizona, October 27, 1902; Dr. R. E. Kunzé; U. S. N. M. Collection.

LACTISTA OSLARI.

Proc. U. S. N. M., Vol. XXVIII, p. 468, 1905.

Described from a unique male specimen from Nogales, Arizona, July 3, 1903; E. J. Oslar; U. S. N. M. Collection.

MESTOBREGMA GRACILIPES.

Proc. U. S. N. M., Vol. XXVIII, p. 471, fig. 5, 1905.

Described from two males and two females from two localities.

Single type here designated: figured ♀; Huachuca Mountains, Arizona, August 25, 1903; E. J. Oslar; U. S. N. M. Collection.

MESTOBREGMA THOMASI.

Proc. Ent. Soc. Wash., Vol. VI, No. 2, p. 125, 1904.

Based on material misidentified as *Ædipoda cincta* Thomas, by Bruner, Scudder, etc.

Single type here designated; figured² ♀; no data. Type lost.

AREOPTERYX PENELOPE.

Can. Ent., Vol. XXXIII, p. 102, 1901.

Based on a single female specimen from Prescott, Arizona, September 29, 1900; Dr. R. E. Kunzé; U. S. N. M. Collection.

PSINIDIA SULCIFRONS³ AMPLICORNUS.

Proc. U. S. N. M., Vol. XXVI, p. 791, Pl. LV, fig. 2, 1903.

Based on a pair from the same locality.

Single type here designated: unique figured ♀; Victoria, Texas, June, 1902; Caudell; U. S. N. M. Collection.

TRIMEROTROPIS SCHAEFFERI.

Mus. Brooklyn Inst. Arts and Sci. Bulletin, Vol. I, No. 4, p. 112, Pl. VII, fig. 1, 1904.

Described from two males from the same locality.

Single type here designated: figured ♂; Topo, near Brownsville, Texas, May [1903]; [Chas. Schaeffer]; Mus. Brooklyn Inst. Arts and Sci. Collection.

TRIMEROTROPIS TITUSI.

Proc. Ent. Soc. Wash., Vol. VII, Nos. 2, 3, p. 125, 1906.

Based on eight males and three females from the same locality.

Single type here designated: ♂; Spreckles, Monterey County, California, September 20, 1904, on sugar beets; E. S. G. Titus; U. S. N. M. Collection.

HELIASTUS BENJAMINI.

Proc. U. S. N. M., Vol. XXVIII, p. 474, fig. 6, 1905.

Based on one male and two females from two localities.

Single type here designated: figured ♀; Huachuca Mountains, Arizona, August 16, 1903; E. J. Osler; U. S. N. M. Collection.

HELIASTUS SUMICHRASTI SUBROSEA.

Proc. U. S. N. M., Vol. XXVII, p. 951, fig. 3, 1904.

Based on a pair from a single locality.

² This figure is very good, excepting the fact that the wing has the transverse band drawn too near its apex.

³ This should be *fenestralis*, correction made, *Can. Ent.*, Vol. XXXVIII, p. 204, 1906.

Single type here designated: unique figured ♂; Galveston, Texas, [April, 1903]; C. Schaeffer; U. S. N. M. Collection.

HELIASTUS GUANIERI.

Proc. U. S. N. M., Vol. XXVI, p. 794, Pl. LV, fig. 3, 1903.

Based on specimens of both sexes representing two localities.

Single type here designated: figured ♀; Pueblo, Colorado, October, 1877; G. F. Guanier; U. S. N. M. Collection.

BARYTETIX BOREALIS.

Proc. Ent. Soc. Wash., Vol. IX, Nos. 1-4, p. 69, 1908.

Based on two males and one female from probably two localities.

Single type here designated: ♂; base of Santa Catalina Mountains, Arizona, August 16, 1907; J. L. Webb; U. S. N. M. Collection.

ÆOLOPLUS BRUNERI.

Proc. Ent. Soc. Wash., Vol. VIII, Nos. 3, 4, p. 134, 1907.

Based on material misidentified as *Caloptenus regalis* Dodge, by Scudder. Type located P. A. N. S. P., 1912, p. 76.

MELANOPLUS BROWNII.

Can. Ent., Vol. XXXIV, p. 169, 1902.

Described from three pairs from one locality.

Single type here designated: ♂; few miles up Colorado River from Yuma, Arizona, December 8, 1901, at head of dry slough; Herbert Brown; U. S. N. M. Collection.

MELANOPLUS COLORADUS.

Proc. U. S. N. M., Vol. XXVI, p. 799, Pl. LV, figs. 1, 1a, 1903.

Described from a single male from Palisade, Colorado, elevation 4741 feet, July 8, 1901; Caudell; U. S. N. M. Collection.

MELANOPLUS INCONSPICUUS.

Trans. Am. Ent. Soc., Vol. XXVII, p. 87, 1902.

Based on a unique male from the Creek Nation, Indian Territory, near Arlington, Oklahoma, May 31, 1901; Mrs. Nellie Caudell; U. S. N. M. Collection.

MELANOPLUS LATIFERCULA.

Proc. U. S. N. M., Vol. XXVI, p. 802, Pl. LV, figs. 4, 4a, 1903.

Based on a single male specimen from Cumbres, Colorado, elevation 10,015 feet, August 14, 1901; Caudell; U. S. N. M. Collection.

MELANOPLUS SONOMENSIS.

Proc. Ent. Soc. Wash., Vol. VII, Nos. 2, 3, p. 124, 1906.

Based on a pair from the same locality.

Single type here designated: unique ♂; Glenellen, Sonoma County, California, [September 18, 1904], on rocky hillside; E. S. G. Titus; U. S. N. M. Collection.

ASEMOPLUS RAINIERENSIS.

Proc. Ent. Soc. Wash., Vol. VIII, Nos. 3, 4, p. 134, 1907.

Based on a pair taken in coitu from a large series of both sexes from a single locality.

Single type here designated: ♂ taken in coitu; Paradise Valley, Mount Rainier, Washington, July 31, 1906, in low, rank, green, grasses; Dyar and Caudell; U. S. N. M. Collection.

AMBYLCORYPHA ISELYI.

Jn. N. Y. Ent. Soc., Vol. XIII, p. 50, 1905.

Described from two pairs from a single locality.

Single type here designated: ♂; Wichita, Kansas, July [29], 1904; Professor Isely; U. S. N. M. Collection.

PARACYRTOPHYLLUS ROBUSTUS.

Jn. N. Y. Ent. Soc., Vol. XIV, p. 36, Pl. I, figs. 1, 6, 1906.

Described from three males and two females from one State.

Single type here designated: figured ♂; Texas; U. S. N. M. Collection.

CYRTOPHYLLUS ELONGATUS.

Jn. N. Y. Ent. Soc., Vol. XIV, p. 40, 1906.

Described from a pair from two localities.

Single type here designated: ♂; Fountain County, Indiana, August [12, 1904]; W. S. Blatchley; U. S. N. M. Collection.

CYRTOPHYLLUS FURCATUS.

Jn. N. Y. Ent. Soc., Vol. XIV, p. 41, Pl. I, fig. 9, 1906.

Based on a single figured male specimen from West Point, Nebraska [in Court House grounds], [in high trees], [late August, 1898]; [J. C. Crawford]; U. S. N. M. Collection.

CYRTOPHYLLUS INTERMEDIUS.

Jn. N. Y. Ent. Soc., Vol. XIV, p. 41, Pl. I, fig. 8, 1906.

Based on a pair from different localities.

Single type here designated: unique figured ♂; Biloxi, Mississippi; Alice Tracy; U. S. N. M. Collection.

XIPHIDION ALLARDI.

Ent. News, Vol. XXI, p. 58, 1910.

Described from two pairs from one locality.

Single type here designated: ♂; Tray Mountain, Towns County, North Georgia, elevation 4,389 feet, late September, in low weeds and short grass; H. A. Allard; U. S. N. M. Collection.

NEDUBA CARINATA CONVEXA.

Proc. U. S. N. M., Vol. XXXII, p. 300, fig. 10, 1907.

Described from a pair from different localities.

Single type here designated: figured ♂; Mount Shasta, California; Behrens; U. S. N. M. Collection.

NEDUBA MORSEL.

Proc. U. S. N. M., Vol. XXXII, p. 301, fig. 11, 1907.

Based on a unique figured male specimen from Mount Wilson [*nec* Altadena], California, July 27, [1897]; A. P. Morse; Morse Collection.

REHNIA VICTORIÆ.

Proc. U. S. N. M., Vol. XXXII, p. 306, figs. 14, 15, 1907.

Based on a unique figured male from Victoria, Guerrero, Mexico; O. W. Barrett; U. S. N. M. Collection.

REHNIA SPINOSA.

Proc. U. S. N. M., Vol. XXXII, p. 307, figs. 16, 17, 1907.

Based on a unique figured male from Texas; U. S. N. M. Collection ex Bruner.

ZACYCLOPTERA ATRIPENNIS.

Proc. U. S. N. M., Vol. XXXII, p. 309, figs. 18, 19, 1907.

Described from a unique figured male specimen from Hawthorne, Nevada, June; Wickham; U. S. N. M. Collection ex Bruner.

CAPNOBOTES OCCIDENTALIS UNIFORMIS.

Proc. U. S. N. M., Vol. XXXII, p. 317, 1907.

Described from a unique figured male specimen from Los Angeles County, California, July; Coquillett; U. S. N. M. Collection.

APOTE NOTABILIS ROBUSTA.

Proc. U. S. N. M., Vol. XXXII, p. 330, fig. 34, 1907.

Based on an unspecified number of specimens apparently from Washington.

Single type here designated: figured ♂; Rockland, Washington, July 4, [1897]; W. K. Fisher; U. S. N. M. Collection.

EREMOPEDES BALLI.

Can. Ent., Vol. XXXIV, p. 100, 1902.

See Caudell, *Proc. U. S. N. M.*, Vol. XXXII, p. 335, 1907, for correct limitation.

Based on six males and two females from two localities in Arizona.

Single type here designated: ♂; Williams, Arizona, July, 1901; H. S. Barber and E. A. Schwarz; U. S. N. M. Collection.

EREMOPEDES (?) BREVICAUDA.

Proc. U. S. N. M., Vol. XXXII, p. 336, fig. 39, 1907.

Described from a unique figured female from Napa County, California; H. Edwards; Am. Mus. Nat. Hist. Collection.

STIPATOR BRUNERI.

Proc. U. S. N. M., Vol. XXXII, p. 343, 1907.

Based on two males and five females from Texas.

Single type here designated: ♂; Texas, [July 14]; Belfrage; U. S. N. M. Collection.

ORCHESTICUS NIGROMARGINATA.

Trans. Am. Ent. Soc., Vol. XXVIII, p. 89, 1902.

Described from a unique female from Texas, [January 5]; Belfrage; U. S. N. M. Collection.

STIPATOR NIGROMARGINATUS GRISEIS.

Proc. U. S. N. M., Vol. XXXII, p. 347, 1907.

Based on a series from one or more localities.

Single type here designated: ♂; Haigler, Nebraska; Carriker; U. S. N. M. Collection ex Bruner.

STIPATOR GRANDIS INSIGNIS.

Proc. U. S. N. M., Vol. XXXII, p. 349, fig. 45, 1907.

Based on one male and three females from one locality.

Single type here designated: unique figured ♂; Dallas, Texas; U. S. N. M. Collection.

STIPATOR MITCHELLI.

Can. Ent., Vol. XLIII, p. 137, fig. 7, 1911.

Based on a unique figured male from Hondo, Texas, March 30, 1908, eating petals of *Opuntia* flowers; J. D. Mitchell; U. S. N. M. Collection.

ANABRUS SIMPLEX NIGRA.

Proc. U. S. N. M., Vol. XXXII, p. 355, 1907.

Based on six males and eight females from four localities.

Single type here designated: ♂; Eddy, Routt [*nee* Route] County, Colorado; U. S. N. M. Collection.

ANABRUS SIMPLEX MACULATUS.

Proc. U. S. N. M., Vol. XXXII, p. 356, 1907.

Described from eleven males and fourteen females from five localities.

Single type here designated: ♂; Fort Walsh, British Columbia, September; U. S. N. M. Collection.

ANABRUS CERCIATA.

Proc. U. S. N. M., Vol. XXXII, p. 361, fig. 48, 1907.

Based on a pair from different localities.

Single type here designated: figured ♂; Washington; Morrison; U. S. N. M. Collection ex Bruner.

ANABRUS LONGIPES.

Proc. U. S. N. M., Vol. XXXII, p. 361, 1907.

Based on one male and two females from the same locality.

Single type here designated: unique ♂; Pullman, Washington, August; C. V. Piper; U. S. N. M. Collection.

ATELOPLUS MINOR.

Proc. U. S. N. M., Vol. XXXII, p. 371, fig. 56, 1907.

Based on a unique figured female specimen from Oracle, Arizona, June 29, [1898]; E. A. Schwarz; U. S. N. M. Collection.

ATELOPLUS SCHWARZI.

Proc. U. S. N. M., Vol. XXXII, p. 372, fig. 58, 1907.

Described from a pair from the same locality.

Single type here designated: figured ♂; Tinajas Altas, Arizona, [1905]; McGee; U. S. N. M. Collection.

ATELOPLUS LUTEUS.

Proc. U. S. N. M., Vol. XXXII, p. 373, fig. 59, 1907.

Based on a pair from the same locality.

Single type here designated: unique figured ♂; Mohave, Arizona; Wickham; U. S. N. M. Collection.

IDIOSTATUS REHNI.

Proc. U. S. N. M., Vol. XXXII, p. 382, fig. 70, 1907.

Based on two males and one female from one locality.

Single type here designated: figured ♂; Siskiyou County, California; A. Koebele; U. S. N. M. Collection.

IDIOSTATUS ELEGANS.

Proc. U. S. N. M., Vol. XXXII, p. 384, figs. 71, 72, 1907.

Described from a pair from Nevada.

Single type here designated: unique figured ♂; [Reno], Nevada; F. H. Hillman, [June 15, 1890]; U. S. N. M. Collection ex Bruner.

IDIOSTATUS VARIEGATA.

Proc. U. S. N. M., Vol. XXXII, p. 387, 1907.

Based on a unique female from Pocatello, Idaho; U. S. N. M. Collection ex Bruner.

PLAGIOTIRA ALBONOTATA BREVIPES.

Proc. U. S. N. M., Vol. XXXII, p. 392, 1907.

Based on a pair from the same locality.

Single type here designated: unique ♂; Williams, Arizona, July 24, 1901, on sagebrush; H. S. Barber; U. S. N. M. Collection.

PLAGIOTIRA GILLETTEI.

Proc. U. S. N. M., Vol. XXXII, p. 392, fig. 77, 1907.

Described from a unique figured male specimen from Grand Junction, Colorado, June 20, 1905; C. P. Gillette; U. S. N. M. Collection.

IDIONOTUS BREVIPES.

Proc. U. S. N. M., Vol. XXXII, p. 396, fig. 81, 1907.

Described from a single figured male from Arctic America; Kennicott; Scudder Collection.

PLATYCLEIS FLETCHERI.

Proc. U. S. N. M., Vol. XXXII, p. 403, fig. 87, 1907.

Described from a unique female from Calgary, Assiniboia, Canada, U. S. N. M. Collection.

CLINOPLEURA MINUTA.

Proc. U. S. N. M., Vol. XXXII, p. 402, fig. 86, 1907.

Based on two pairs from a single locality.

Single type here designated: figured ♂; Calaveras [County], California; U. S. N. M. Collection.

CYPHODERRIS MONSTROSUS PIPERI.

Jn. N. Y. Ent. Soc., Vol. XII, p. 53, 1904.

Based on one adult male and two female nymphs from a single locality.

Single type here designated: unique ♂; Paradise Valley, Mount Rainier, Washington, elevation 6,000 feet, in grove of Alpine fir; C. V. Piper; U. S. N. M. Collection.

MARSA TUBERCULATA.

Proc. U. S. N. M., Vol. XXXIV, p. 79, 1908.

Based on a pair from the same locality.

Single type here designated: unique ♂; Eureka, California, July 5, 1906, under loose bark of old tree near ground; Caudell; U. S. N. M. Collection.

DAIHINIA PHRIXOCNEMOIDES.

Ent. News, Vol. XVIII, p. 11, figs. 1, 1a, 1907.

Described from a unique figured female specimen from Mesilla Park, New Mexico, August 12, 1898; Cockerell; U. S. N. M. Collection.

NEMOBIUS FASCIATUS ABORTIVUS.

Can. Ent., Vol. XXXVI, p. 248, 1904.

About three dozen specimens of both sexes from one locality.

Single type here designated: ♂; Moose Jaw, Assiniboia, August 24, 1903, in grass, in and along borders of draw on prairie; Caudell; U. S. N. M. Collection.

MIOGRYLLUS OKLAHOMÆ.

Trans. Am. Ent. Soc., Vol. XXVIII, p. 90, 1902.

Based on a single male specimen from Perkins, Oklahoma, May 16, 1901; Mrs. Nellie Caudell; U. S. N. M. Collection.

CYRTOXIPHA COLUMBIANA.

Jn. N. Y. Ent. Soc., Vol. XV, p. 237, 1907.

Based on a pair from different localities.

Single type here designated: unique ♂; Falls Church, Virginia, September 14, 1907; N. Banks; U. S. N. M. Collection.